CLAIMS

What is claimed is

1. A method of manufacturing a stent, comprising:

attaching a first group of particles together to form a first porous network; and

attaching a second group of particles together and to the first porous network to form a second porous network, wherein the average particle size of the first group is greater than the average particle size of the second group so that the first porous network has an average pore size that is greater than the average pore size of the second porous network.

2. The method of Claim 1, wherein the second porous network forms a tissue contacting side of the stent.

3. The method of Claim 1, additionally comprising depositing a therapeutic substance in the first porous network, wherein the second porous network reduces the rate of release of the substance from the stent after the stent has been implanted in a body of a patient.

4. The method of Claim 1, additionally comprising depositing a polymeric film layer on the second porous network.

5. The method of Claim 1, wherein the particles of the second group are attached all the way around the first porous network such that the second porous network completely surrounds the first porous network.

6. The method of Claim 1, additionally comprising attaching a third group of particles together and to the first porous network to form a third porous network, wherein the first porous network is positioned between the second and third porous networks.

7. The method of Claim 6, wherein the average particle size of the first group is greater than the average particle size of the third group.

8. A method of manufacturing a stent, comprising sintering elongated fibers together to form a component of a stent body.

9. A method of manufacturing a stent, comprising:

forming a first porous region;

forming a second porous region disposed over a portion of the first porous region; and

depositing a therapeutic substance in the first porous region, wherein an average pore size of the second porous region is less than an average pore size of the first porous region.

10. The method of Claim 9, wherein the second porous region is for contacting the wall of a vessel when the stent has been implanted in the vessel.

11. The method of Claim 9, additionally comprising forming a third porous region over a portion of the first porous region such that the first porous region is between the second and third porous regions.

12. The method of Claim 9, additionally including depositing a film layer over the second porous region.

13. The method of Claim 12, wherein the film layer comprises a biodegradable polymer.

14. The method of Claim 12, wherein the film layer comprises a non-degradable polymer.

15. The method of Claim 12, wherein the film layer includes a second therapeutic substance.

16. The method of Claim 12, wherein the film layer has a thickness from about 0.0001 inches to about 0.002 inches.

17. The method of Claim 9, wherein the therapeutic substance is for the treatment of restenosis.

18. The method of Claim 9, wherein the first or second porous region is formed by sintering particles.

19. The method of Claim 9, wherein the first or second porous region is formed by sintering a matrix of overlapping filaments.

20. The method of Claim 9, wherein the first or second porous region is formed by sintering woven wire fibers.

21. The method of Claim 9, wherein the first porous region is formed by sintering particles having a first average diameter, and the second porous region is formed by sintering particles having a second average diameter, wherein the first average diameter is larger than the second average diameter.

22. The method of Claim 21, wherein the first average diameter is 10 to 20 microns.

23. The method of Claim 21, wherein the second average diameter is 2 to 4 microns.

24. A method of manufacturing a stent, comprising:

forming a first porous region;

forming a second porous region disposed over a first portion of the first porous region;

forming a third porous region disposed over a second portion of the first porous region; and

depositing a therapeutic substance in the first porous region, wherein an average pore size of the second porous region and an average pore size of the third porous region is less than an average pore size of the first porous region for reducing a rate of release of the therapeutic substance from the first porous region after the stent has been implanted in a vessel.

25. A method of manufacturing a strut element for a stent, comprising:

placing metallic particles having an average first diameter in contact with each other;

sintering the metallic particles having the average first diameter to form an inner core;

placing metallic particles having an average second diameter on the inner core; and

sintering the metallic particles having the average second diameter to form a porous outer layer.

26. The method of Claim 25, wherein the average second diameter is less than the average first diameter.

27. The method of Claim 25, further comprising depositing a therapeutic substance in the inner core.

28. A stent comprising a strut element, wherein the strut element includes a solid metallic inner core and an outer layer disposed over the inner core, the outer layer being made from a porous metallic material.

29. The stent of Claim 28, wherein the porous metallic material is made from sintered particles, filaments or fibers.

30. The stent of Claim 28, wherein the outer layer is capable of holding a therapeutic substance for releasing of the substance after the stent has been implanted in a vessel.

31. A stent comprising a solid metallic region and a porous metallic region disposed on the solid metallic region.

32. The stent of Claim 31, wherein the porous metallic region is made from sintered particles, filaments or fibers.

33. A method of manufacturing a strut element for a stent, comprising:

applying metallic particles onto a solid inner core; and

sintering the metallic particles to form a porous outer layer disposed over a portion of the solid inner core.

34. A method of manufacturing a sintered sheet element for a stent, comprising:

placing metallic particles having an average first diameter to a first surface of a metallic core layer;

placing metallic particles having an average second diameter to a second surface of the metallic core layer;

sintering the metallic particles having the average first diameter to form a first porous outer layer; and

sintering the metallic particles having the average second diameter to form a second porous outer layer.

35. The method of Claim 34, wherein the first and second porous outer layers are on opposing sides of the metallic core layer.

36. The method of Claim 34, wherein the metallic core layer is a porous substrate.

37. The method of Claim 36, wherein an average pore size of the of the metallic core layer is less than an average pore size of the first and second porous outer layers.

38. The method of Claim 34, wherein the metallic core layer is a solid substrate.

39. The method of Claim 34, further comprising applying a therapeutic agent to the first porous outer layer or the second porous outer layer after the formation of the first and second porous outer layers.

40. The method of Claim 34, further comprising applying a first therapeutic agent to the first porous outer layer and a second therapeutic agent to the second porous outer layer after

the formation of the first and second porous outer layers, the first and second therapeutic agents being different.